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Ammunition Quarterly

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From the Program Manager



Mr. Jerry Mazza
Program Manager for Ammunition

Welcome to the summer edition of the Marine Corps Systems Command, "Ammunition Quarterly (AQ)." Recall in our last edition, I commented on potential revisions to the AQ appearance. This new look represents the third drastic change since we began publishing the AQ in 1995.

I hope it is received well by our community and by all readers. In this edition, you will find material both for informational purposes as well as articles of a technical nature.

Continued Below

Inventory management is one function of this office that impacts the Marine Corps as a whole. As such, I asked Mr. Dennis Zarnesky, the Head, Inventory Management and Systems Division, to write a brief article on a few challenges facing us. I believe you will find a bit of good direction as well as humor in his article. Also, SSgt. Walker took the initiative and submitted an article accompanied by detailed photographs that provide a unique insight to the mission, roles and responsibilities of the Forward Ammunition Supply Point at Camp Fuji, Japan.

The Marine Corps Systems Command (MCSC) has jointly hosted previous Ground Ammunition Conferences. In the near future, I will meet with Major A.D. King of the Training and Education Command to discuss initial coordination of a FY02 Ground Ammunition Conference. I believe we may see some slight adjustments from the way we have executed in the past and would anticipate an initial joint message in the July/Aug time frame.

In the past, I have solicited the Operating and Supporting establishment as well as my own staff to contribute to our AQ. I felt it a good time to take my own advice and prepare a form of a "State of Ammo" for this edition.

In short, the times are changing and all facets of ammunition management will change as well. This office serves as the Corps' singular entry point for customers in the Life Cycle Management of ground conventional ammunition and explosives (A&E).

Over the past year, we have laid the baseline for revolutionizing all facets of ammunition logistics with a "cradle to grave" concept in mind. The PM Ammunition (PMAM) staff has focused on Service Level policy and strategy to address current ammunition programs and the development of future ammunition programs to support existing and emerging needs. New policies have added additional oversight responsibilities to management across the entire A&E spectrum. Significant efforts have been applied over the past year to the Insensitive Munitions (IM) arena as key participants in DOD Insensitive Munitions (IM) Integrated Product Team, the Joint Service IM Technical Panel (JSIMTP), DOD Energetic Qualification Working Group, and the Navy IM Council. PMAM has briefed the JSIMTP on the Marine Corps planned ammunition procurements across the FYDP. Of note was the base lining, relative to IM, of the entire USMC Stockpile.

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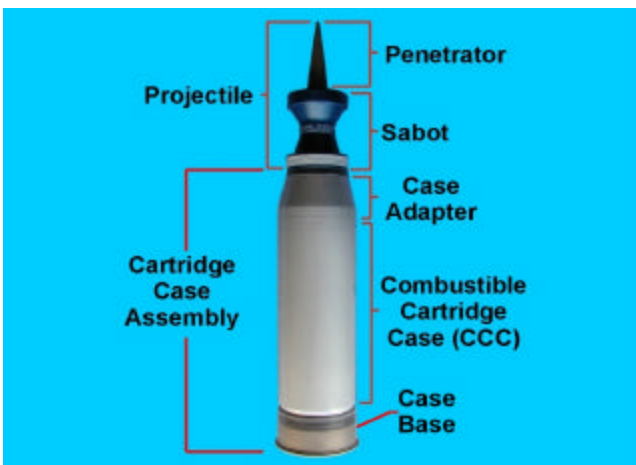
Ctg., 120mm TPCSDS-T M865 (DODIC: C785) Residue Problem

Mr. Matthew O'Malley, MCPD and
CWO3 P. Barack, MARCORSYSCOM

In an effort to alleviate production quality problems and to reduce the overall cost of the 120mm Target Practice, Cone Stabilized, Discarding Sabot with Tracer (TPCSDS-T) cartridge, the Operations Support Command (OSC), along with the manufacturers and concurrence from the Marine Corps, decided to redesign the projectile-to-case adapter from a "bolt-on configuration" to a "snap-on configuration."

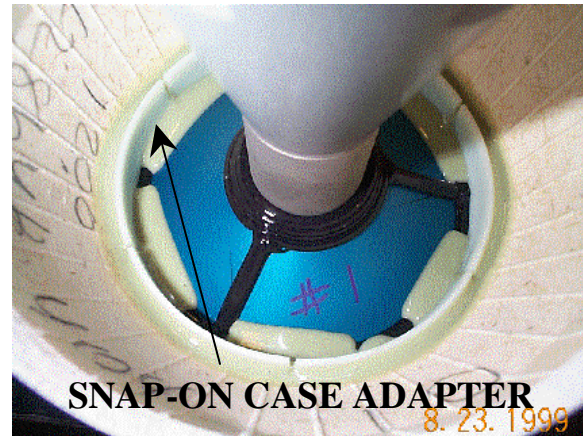
Shortly after fielding the "new" configured M865, the Army began experiencing joint separation while chambering/de-chambering and handling these cartridges. It appeared that the "snap-on configuration" was, and in fact is, not robust enough to withstand the strain of chambering/de-chambering or rough handling.

At this point the Marine Corps had yet to take deliveries of the newly configured M865 cartridge; however, the Army had to suspend approximately 140K cartridges.



The newly designed snap-on joint resulted in the majority of the projectile assembly weight being borne by the lip of the case adapter, which was not strong enough to withstand the shock/vibration of loading.

This was especially true if a side load (shock) was applied to the tip of the projectile core, (e.g. striking the tip of the core on structural members inside the tank or breech while chambering a cartridge). Under these conditions, the case adapter lip would shear, resulting in a separation between the projectile assembly and the case adapter.



Additional user testing (handling, multiple chamberings/de-chamberings) was accomplished to verify/quantify the joint failure mode, and what conditions exacerbated the problem. The testing verified that the snap-on joint design was inadequate.

As a result, engineering analyses of potential modifications to the snap-on joint design and production processes commenced, in an effort to make the projectile-to-case adapter joint more robust. The selected change included modifying the insert cover and adding a "wedge" of epoxy adhesive between the insert cover and the inside surface of the cover adapter. This was done in an attempt to distribute the shock/vibrations forces over a larger area of the case adapter. Over 300 cartridges were successfully tested prior to going into production with the new joint configuration. However, shortly after these modified snap-on joint configured cartridges reached the field, the Army reported frequent incidents of chambering problems due to residue in the gun tube.

Site visits determined that the chambering problems were due to chunks of a "green" epoxy residue found inside the gun tube after firing the modified M865 cartridges. The epoxy wedge that was used to strengthen the joint was not being completely consumed or expelled from the tube during firing.

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While the additional epoxy wedge increased the robustness of the snap-on joint, it was now occasionally (less than 4% of the time) creating residue in the gun tube after firing. The residue was not smoldering or burning, nor hot enough to cause smoldering, burning, or ignition of subsequently chambered cartridges. While this is not a safety problem, it does have a negative impact on training, especially gunnery qualifications, which require timed engagements.

The root cause analysis for this residue is ongoing, as well as testing of potential fixes. Potential fixes included using a different type, but the same amount of epoxy, or using the same type of epoxy, but a smaller amount. Improvements have also been made to the insert cover mold, which will result in keeping tighter dimensional tolerances. Also, while testing potential snap-on joint configuration modifications, both manufacturers of the M865 cartridge are preparing their production lines for producing cartridges with the original bolt-on joint configuration.

Currently, the Army still has approximately 140K M865 cartridges that are suspended. These cartridges have the original snap-on joint configuration (no epoxy wedge), and are prone to projectile-case separation. The Marine Corps has none of these assets.

The M865 cartridges being manufactured now have the modified snap-on joint configuration (with the epoxy wedge). Cartridges with this configuration will continue to be manufactured while investigation into the residue problem, and potential fixes, continues. Therefore, the Marine Corps will continue to receive M865 cartridges, which have the potential for producing residue in the gun tube, until a redesigned M865 is qualified. A new qualified M865 will either be a new redesigned snap-on joint configuration that will not be prone to separation or have the potential of leaving residue in the gun tube, or reverting to the bolt-on

joint configuration. Selection is scheduled for 1 July 2001.

The Marine Corps has received 7,838 modified M865 cartridges and will be receiving approximately 22,500 additional cartridges this year. These quantities equate to more than two years worth of training ammunition. Refer to Navy and Marine Corps Ammunition Information Notice (AIN) 039-01 for further details and guidance on proper procedures related to this epoxy residue issue. O

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Ammunition Support at Camp Fuji, Japan

SSgt Charlie Walker, Camp Fuji ASP

Nestled at the base of Mount Fuji, the Camp Fuji ASP provides ammunition support for the deployed III MEF units training on the many ranges located throughout the area. The Fuji Maneuver Area consists of two ranges covering 34,000 acres.



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The HQBN Camp Fuji S-4 Ammo Section has a T/O of eleven Marines. All eleven are one year unaccompanied FAP (Fleet Assistance Program) from the Third FSSG in Okinawa. The constant challenges here are the fast turnover of personnel, training Marines straight from school, and the changes in the units training plans due to range availability and firing restrictions. The ASP is composed of two sections, the Storage Section (average of seven Marines) and the Records Section (two Marines).

The Storage Section is tasked with the issue, receipt and warehousing of ammunition. The Marines also supervise retrograde demil and shipment preparation. The ammunition residue, demil, and transportation requirements are obliterating the container nomenclature, sorting cartridges and links, just to name a few requirements. In CY00, the ASP received 779.71 tons and issued 675.769 tons of ammunition. Also in the same year there were 310 issues performed here.

The Records Section perform the tasks of keeping track of issue and receipt documentation, NAR's, AIN's, Qual/Cert documentation, all message traffic both in-coming and out-going, publications, and vehicle inspections. Basically, they perform all administrative matters pertaining to the section.



Ammunition accounting and tracking is done using ROLMS (Retail Ordnance Logistics Management System). During CY00, the Records Section processed 1041 receipt and 1779 issue transactions. The support procedures that we follow are outlined below:

1. Major Commands requisition Class V (W) support,

30 days prior to their RDD (Required Delivery Date) via Naval Milstrip Message to the Camp Fuji ASP (Info to CFAY and CFAS).

2. The ASP validates the requisition against uncommitted ammunition assets stored inside the magazines.

3. The ASP transmits a Naval Milstrip Message to the Command requesting support, showing Class V (W) Supply Support Status. The message will also info CFAY (Commander Fleet Activities Yokosuka) and CFAS (Commander Fleet Activities Sasebo).

4. If ammunition shortfalls are identified, CFAY and CFAS will source the needed assets to Camp Fuji if available.

At the end of an exercise, the Records Section validates the expenditure reports and issue /receipt documentation with each individual unit ammo tech. Once this is completed, the unit ammo tech will forward the report to the higher command.

The storage facility covers 3.73 acres and has seven magazines consisting of over 130 line items. Due to the limited NEW and space, the ASP has to be very proficient in forecasting ammunition resupply requirements in order to support training units.



The training unit provides the working party and the ASP furnishes the banding equipment and a supervisor. The ASP transports the retrograde material from the installation to Sagami-hara Depot (DRMO). In CY00, the ASP shipped 149.44 tons of retrograde material to the depot.

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As of 19 April 2001, the ASP has shipped 20.92 tons and with 8 months left the number is still growing.

Due to the magazine sizes and workload, our forklift operators become very proficient because they are constantly warehousing ammunition. There is no setup magazine or vehicle staging area, so ammunition has to be staged by issue sequence in the same location it is regularly stored.



Ammunition support requirements range from the size of a Cloud Warrior Exercise (260 personnel) to a CAO (Combined Arms Operation) consisting of 1200 personnel or a combination of both at the same time.

At a larger facility new ammo techs may work for four months in a section with just two families of ammunition. Here at Camp Fuji they get to handle all the families within the same timeframe. When a new ammo tech departs Camp Fuji, they become a greater asset to the ammo community due to the exposure they receive while here at the facility.

Regardless of the workload, the ammo techs of Camp Fuji will be here to provide the support needed to the units training aboard this installation. O



SSgt Walker is presently assigned as Ammo Chief, Camp Fuji ASP and may be reached at DSN 265-5398 or email: walkerc@fuji.usmc.mil. Photos furnished by author.

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This resulted in identification and program initiation of potential candidates for conversion of current explosive fillers to ones less susceptible to unplanned stimuli. The staff has challenged the procurement practices used by the Single Manager for Conventional Ammunition (SMCA), the DOD mandated conventional ammunition acquisition executive agent. Post CMC directed Ground Training Ammunition Review Group (GTARG) challenges have seen an increase in special allowance requests in FY01 to support training. To meet this challenge and ensure sound decisions are made, we have employed an internal Decision Support System (DSS), which graphically displays requirements, and current/future inventory levels, to enable sound logistically and fiscally supportable decisions. The DSS also serves as an invaluable source of historical data that can be used by all ammunition logisticians and external agencies. To ensure continued, uninterrupted training and combat support to our operators, we have closely monitored training expenditures and AAO achievement and have ensured balanced funding profiles throughout the FYDP. In those areas where deficiencies either existed or were potentially threatening, we embraced Congressional assistance via Unfunded Priority List enhancements and enjoy an extremely high success rate, \$56M in FY00. We will continue to address the operator's needs with focus on ensuring that the most cost effective, quality ammunition and explosives are introduced into our inventory.

One of our most crucial functions is Inventory Management. We are committed to making the most judicial use of the Corps' \$4.5 billion stockpile. An enabler to all our logistics processes is asset visibility and inventory accuracy (IA). This focus has become increasingly complex as a generally static procurement budget and decreasing stockpile necessitates a logistically sound approach in inventory management decisions. PMAM established an IA Section that serves as lead in identifying transaction processing/procedural anomalies and the conduit to retail accounts for record reconciliation. We have aggressively pursued Total Asset Visibility (TAV). With trend analysis identifying the weak links, PMAM, with your support, increased the number of reporting activities, specifically targeting Navy ships and now have ALL Landing Force Operational Reserve Material (LFORM) carriers

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reporting and receive periodic lot reports from these ships at a rate of 94%, up from 13% the previous year. We have significantly reduced transaction errors between reporting activities and the Inventory Control Point from a constant level of 50% to a current, consistent level of less than 10% with the goal of further reducing errors between the ICP and A&E reporting activities holding USMC assets.

There is a need to modernize our wholesale legacy accounting system. My Systems Branch has engaged their Navy counterparts to determine suitability of the Conventional Ammunition Integrated Management System (CAIMS) – Open Systems Environment (OSE) and found it to be the most viable of all current or future systems. The pending transition from our legacy ammunition accounting and reporting system to the CAIMS-OSE signals a major shift in ordnance management within the Navy. Once complete, Marine Corps Aviation and Ground Ammunition, and the U.S. Navy will be unified in a singular Ordnance Management System that will serve the total Naval Department. This system transition will facilitate more accurate stockpile visibility; data exchange, leverage Service resources, and better serve the war fighter.

With the previous adoption of the Retail Ordnance Logistics Management System (ROLMS) to enhance retail accountability, the final phase is to address the consumer level tracking and visibility tool for A&E assets. The CINC 129 requirements raised the bar on logistical awareness and drives the need for continual refinement of our practices in supporting war fighter needs. Accordingly, we have taken an aggressive approach in positioning the Corps to meet those requirements in developing a capability to address TAV below the retail level and up to linkage to the Global Combat Support System (GCSS).

A significant element to stockpile management is the surveillance, maintenance, and renovation of existing assets. We are committed to supporting Marine Forces with quality ammunition fostering confidence in its use. It is imperative that reliability of ground ammunition is optimized. Only through a robust Reliability, Availability, Maintainability, and Quality (RAM-Q) program can the USMC advertise, more so than any other Service, an extremely high availability across all families of A&E. While RAM-Q addresses the overall

quality of the stockpile, the continued drawdown of the stockpile requires ever increasing levels of management to ensure USMC assets are managed and expended in the best interest of the Corps. Policies to ensure older, less preferred lots of ammunition are utilized in training have been institutionalized. Similar policies to reduce the number of individual ammunition lots as well as an aggressive purging of obsolete NSNs from the inventory serve to mitigate the logistical burdens on the use, processing, and shipment of A&E while retaining new, preferred munitions for MPS and LFORM loads. The product of these and like efforts is provisioning our operators with the best quality ammunition available.

Logistical jointness has become critical across Services. Teaming and collaboration are essential elements to inter-Service support. The level of teaming mandated by the Program Manager with Service counterparts has, and will continue to bear fruit for the Corps. We have achieved significant accomplishments in support of Marine Forces Reserve. Collaborating with other Services, predominately the Army, PMAM has achieved a sound and executable Memorandum of Agreement (MOA) that reduces logistics turbulence and avoids associated USMC Second Destination Transportation costs to support the USMC(R) who train primarily aboard hundreds of U.S. Army installations.

To further enhance support, PMAM in conjunction with DC, I&L (LFT), assisted in development of policy for use of Small Carrier Shipments of A&E, via Federal Express (FedEx). This policy permits us to ship selected items/ quantities of A&E to our Operating Forces. PMAM is the Executive Agent for implementation and tracking of FedEx shipments and exercises prudent decision making when utilizing FedEx. FedEx greatly enhances logistics flexibility enabling selective practice of “just in time” delivery while lessening fiscal impact on movement of A&E.

The geo-political climate in the U.S. continues to stress A&E logistical issues. Increasing strains of urban sprawl, finite resources such as land in and around military installations, cause increases in public pressure that directly or indirectly affected the logistic management of ammunition. Increased environmental regulatory involvement as evidenced by virtually all States adopting the Military Munitions Rule, reinforces the statement that public interest is increasing in how we manage A&E.

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PMAM has provided continued support and participation in the DoD-level Operational and Environmental Executive Steering Committee for Munitions (OEESCM). This committee focuses on developing sustainable courses of action to ensure operational readiness is not adversely impacted by external explosives safety and/or environmental influences. PMAM chairs the OEESCM Munitions Stockpile Management Subcommittee and regularly participates in the other OEESCM subcommittees. To date, the OEESCM efforts have resulted in the promulgation of a DoD directive on active/inactive range management policy as well as the soon to be released DoD directive for the management of materials potentially presenting an explosives hazard. We continue to coordinate and provide significant input to DoD, DoN, and USMC policies/orders from an A&E perspective. These actions not only codify USMC ammunition regulations, but also affect positive change in the corporate DoD perspective. As an example, PMAM led the effort to publish MARCORSYSCOM 8020.1 Demilitarization/Disposition Plan Requirements for New or Modified ammunition that mandates the approval of a "demil/disposal" plan prior to OT&E. This policy should ultimately reduce the volume/quantity of waste generated by manufacturing, use, and final demilitarization. We continued to execute the USMC Explosives Safety Program as delegated by HQMC (SD) and have consistently supported our installations with technical expertise while interfacing with the Naval Ordnance Safety and Security Activity and the DoD Explosives Safety Board. To ensure continuity of expertise at all USMC installations, my Explosives Safety Branch implemented the Explosives Safety Officers Course to be presented this month. We regularly augment the DC I&L (LFL) Environmental Compliance Evaluation staff with technical expertise for the waste military munitions portion of the evaluation.

From an operational perspective, my staff has supported, planned, and executed post-procurement logistics for Class V (W) ensuring operational logistics support to Marine Forces worldwide and have initiated a three part approach as the most viable solution in enhancing this support. First, they have begun the development of the first Logistics Policies & Procedures (LPP) Manual related to munitions and when complete, will delineate duties and responsibilities for the

Operating Forces/MARCORSYSCOM with respect to deliberate planning and execution of Class V (W) sustainment support. Secondly, they have engaged our Operating Forces, in coordination with the PM, Information Systems, MCSC to assess and potentially adopt the Sustainment Calculation Model for executing ground ammunition sustainment support. Finally, we are partnering with the Navy in exploring the merits of the Global Navy Ordnance Prepositioning Plan (GNOPP) process. This effort shows promise and could provide a great bridge in forward positioning assets to fill the void that exists between force held starter stocks and sustainment.

As you can see, they are some substantive changes in the short, mid, and long term. PM Ammunition, my staff, and every 2311 and 2340 have challenges looming. Only as a team...only with the contributions, input, participation, and dedication from the entire Corps Ammunition Team will we be able to achieve our vision. I ask that you all come on board. This ride will be fun, and it will be rewarding. O

Semper Fi,



Ground Ammunition Management (GAM)

Mr. Dennis Zarnesky, Head, Inventory Management and Systems Division, MARCORSYSCOM-AM

We, as the inventory control point (ICP), ground ammunition inventory managers (IM) felt compelled to throw out another acronym on behalf of all our fellow ammunition managers. We'd like to embrace GAM as our battle cry. For you historians it also refers to a friendly conversation, at sea or ashore, between riflemen. As we are all riflemen, and ammunition managers this article is meant for all. Rifleman is also appropriate because we either wear, or have worn, the rifle marksmanship badge to signify proficiency.

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Sit back enjoy a cup of turpentine, and don't go UA, and let's gam awhile. We, the beltway ground ammunition rifleman have embarked upon new initiatives to improve the way we manage ammunition and you have contributed magnificently, but we need your support in a few areas.

First let me give you the current beltway relay, which is Karen Ross, Wayne Johns, MSgt Paul Cheviot, GySgt Ernest Shifflet, GySgt William Inns, SSgt Adam Lauer, SSgt Lamar Blassingame, and myself. Wayne and I have had the fortune of firing on a few relays around the Corps. Karen has fired on the Marine Corps Programs Department (MCPD), Fallbrook relay annually for 6 years and 3 relays here at PMAM. As for our backbone, the Tops fired on a few ranges Corps wide and so have his fellow SNCO's. I'd like to recognize some of the distinguished shooters who shot on the beltway relay over the past 3 years but have departed. MSgt's Tate and Frazier, GySgt's Swain, Crossly, Spencer and Smith. I'd like also to take a second to remember one of those high shooters, GySgt Bernard O. Smith who passed May 99.

Lets get back to gamming. We developed a battle rhythm a couple of years ago with the main beat being attaining total asset visibility and increasing our inventory accuracy. A few notes of our rhythm involved the systems that will be gammed about in the next quarterly. Riflemen, our choir practice has paid dividends. We've gained greater asset visibility and increased our inventory accuracy over the last couple of years to a consistent tight group in the four ring and a few well placed ones in the 5 ring as we practiced BRASS (breath, relax, aim, slack, squeeze). Some of those tight four ringers are the actions taken to reduce the number of transactions that error as part of the reporting process between you and the ICP. That error rate fell from 50% plus two years ago to the present level of single digits. Now keep breathing and relax, keep that aim take up that slack by using proper document identifier codes, and squeeze only once don't send us duplicate transactions and we'll put them in the black. In taking up the slack ensure we use the appropriate D7 and 6 series transactions either A's or K's where appropriate. Squeeze your daily transaction only once as we continue to receive isolated duplicate batches from your activities. ROLMS shooters this is plotted in your range book.

Lets get another one out of that tight group by continuing to breath the sea air, relax on the deck of an LHA/Ds or LPDs, aim at Landing Force Operational Reserve Material (LFORM) and lets take up the slack of inconsistent reporting and squeeze the processes contained in SYSCOM message 08161 Jan 00. MARFOR, MEF, SURFLANT/PAC, NWSF liaison, CCO/A's riflemen lets get our windage adjusted on this one so we can get this one in the black.

One, or maybe two, 4's we can get into the black by continuing to breath daily, relax in every clime and place, aim at reporting every day, take up the slack of occasionally forgetting a day and squeeze that daily transaction batch only once a day. ROLMS rifleman on occasion you've forgotten to squeeze your daily transactions to us or have squeezed the daily transaction rapid fire when we only need single shots for this phase of the GAM course when firing at the daily transaction-reporting target. Lets adjust the front sight post one click and get both these 4's in the black.

A round we continually fire using good BRASS are those that account for our procurement deliveries. One of our high shooters, Randy Murdock, who is a member of our liaison office at the Operations Support Command (OSC), Rock Island serves as the PMI for the Army depot shooters who receipt for the preponderance of our production deliveries. Receipts from production shots were verified during a Naval Audit Service review and their official comment was nothing because they found no inefficiencies with our process.

The beltway relay realized some months ago they needed a couple of good PMI's, but volunteers to assume that duty were scarce. Two folks were FAP'd to the inventory accuracy section in May 00 to help the relay as well as lend their assistance to the rest of the shooters. Our PMI's are CWO2 Gary Walker and GySgt Connie King. The PMI's have rolled out the white barrel in the center of the aisle and urge us to take grass week seriously and often. The white barrel rather than display the able, baker, baker-modified and dog targets display D8 and 9 targets. D8 and 9 series transactions are inventory adjustments that usually result from not practicing BRASS consistently. We've got our breathing down and have relaxed on this issue, but now must find our aim so we can ask you all to take up the slack and squeeze off these highly visible D8 and 9 match rounds. Once we

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discover our aim point while in the grass on this issue we'll give you some windage. Also our aim point can be improved dramatically by getting those fours identified above into the black, and the slack and squeeze must become a matter of habit on all rounds, to include these match ones.

In closing, I want to comment on the accounting of our serialized reportable items. I don't believe we can even begin to practice good BRASS on the expenditure reporting of these items because we don't have a good sight picture regarding expenditure reporting. Some time ago we promulgated direction on expenditure reporting in a SYSCOM message 190056Z Aug 93 and 070400Z Jan 98. The sight picture we created with this guidance has caused us an undue administrative burden, as well as the inability to close the loop on this process. We have been in the grass on this one, and have continually adjusted the sling so we can give you all a better sight picture to get expenditure reporting out of the butts and send Maggie's drawers to the cleaners. We have developed a sound solution for issuance and expenditure reporting of reportable serialized items that will actually bring it somewhat in line with the issuance and recovery of our beloved service rifle. The process is contained in a draft SYSCOM message and in a tutorial is available on our web site. I look forward to a tight group in the 5 ring on this one and must ask for all shooters of reportable serialized items and our ammunition support activities to embrace this effort. O

Mr. Zarnesky is currently Head of IM&S Division at MARCORSYSCOM and may be reached at DSN 278-9194.

Malfunctions Mean Paperwork!!

**Mr. Jim Francis, Malfunction Coordinator
Marine Corps Programs Department**

You drop a 81mm H.E. cartridge down the mortar tube, like the previous 14 rounds ... but this one doesn't fire.

"Damn! A malfunction! Why me?" You wait; kick the tube; and wait; then clear the tube. "Good primer hit.", you say to yourself. Your unit begins firing again. BOOM! BOOM! Then another misfire! BOOM! Then two more misfires. You're forced to cancel the FIREX. You've fired this lot before with no problems. You followed all the procedures. Why misfires now? A lost day for 36 Marines; but it's not over yet.

Later, at the ASP, you turn-in the 76 rounds you had planned to shoot, plus the 4 misfires. The Ammo Tech reminds you about the Malfunction Report. PAPERWORK! Time to collect info needed for the report. "Where's MCO 8025? Who reads these things anyway??"

Sound familiar?? About 170 Marine Corps Ammunition Malfunction and Defect Reports are submitted yearly. The reports are sent to what might appear to be five of every expert known to Mankind! Actually, distribution is to specific offices directly involved with ammunition quality and safety, including the Quality Assurance (QA) offices within the Marine Corps, Navy, and Army. One of the info addresses on the report message is "MARINE CORPS PROGRAMS FALLBROOK CA//4092//". That equates to my desk at Marine Corps Programs Department (MCPD). PM-AM has tasked MCPD with assessing each malfunction/defect report and providing recommendations to the QA/M Section within 72 hours of receipt (24 hours in case of injury, fatality, or critical safety concern). As Malfunction Coordinator, I receive the messages, prepare an information/response form, and then work with one of 28 MCPD Project Leaders, who conduct the technical evaluation. The response goes via e-mail to QA/M and the other QA offices. The evaluation includes:

- Current inventory data
- Data Card info (quantity, date manufactured, lot acceptance results)
- Lot history (NAR's, surveillance, malfunctions, inspections)
- Description of probable cause(s)
- Item requirement (War Reserve Munitions, training, serviceable quantity)
- Recommended action (restriction/suspension, investigation, retain in current Condition Code)

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- Rationale supporting recommendation
- Overall impact of recommendation on Marine Corps' stockpile.

Sometimes, we contact the POC listed on the message, EOD, Range Safety, the issuing ASP, armory, SOI, or other source for additional details. We also conduct on-site investigations as necessary to determine the cause of an incident; and provide assistance to other services during formal investigations of Marine Corps malfunctions.

Fortunately, ammunition is designed and manufactured with a high degree of reliability and user safety considerations. The occasional failure of ammunition can result from a variety of causes: weapon misadjusted, out-of-battery, dirty, obstructed, damaged, or aged; ammunition with manufacturing, design, or material defects; ammunition with age-related degradation of components; user error or handling damage; or simply, an isolated failure of unknown cause. Our primary responsibility is to determine if the ammunition is at fault... bottom line. When potentially dangerous failure modes are identified, we want to ensure the affected lots are suspended from use until the matter is resolved. Our primary concern is user safety. I would like to emphasize that we do not focus attention on user error. If a high frequency of user error becomes evident, then we may look closely at training procedures and Tech/Field Manuals. The last thing I would want to do is discourage the reporting process due to fear of reprisal.

Information from malfunctions becomes a valuable tool to the QA community. Malfunction information is a true indicator of ammunition performance during field conditions. This information is collected and entered into a centralized database. The database provides information to other MCPD tasks, such as sample selection for stockpile surveillance (ballistic and laboratory) testing, Contractor Performance Certification Program (CP2), Maritime Prepositioned Force (MPF) asset suitability, Reliability, Availability, Maintainability and Quality (RAM-Q) reports, and Life Cycle Management (LCM) analysis. Much of this same information also provides justification and support for the ammunition maintenance and renovation program run by Naval Surface Warfare Center at Crane, Indiana.

Ultimately, the information could be used by PM-AM to convince Congress to purchase new and better ammunition.

In regard to the importance of malfunction data, I'll step up on my ammo box here. When our stockpile surveillance test data is compared with actual training expenditures, it is evident that not all malfunctions are being reported. Because of the number of test malfunctions we see, we believe the 170 reports we receive each year represents only 15% to 30% of the actual number of malfunctions which occur. Many Marines have supported this estimate. Some say it's even lower. I'd like to challenge you to think of me as your auto mechanic - - [No, don't shoot me!!] If you are not telling me what problems you're having in the field with your ammunition, then I'm not able to fix them or to bring those problems to the attention of someone who can. MCO 8025.1D directs, "Action. All ammunition malfunctions and defects must be reported, including those experienced during combat operations." OOORRAHHH!! [OOPS, sorry about that. I'd better get down off this box] Just send me your reports- good, complete, and accurate reports.

If you haven't noticed by now, I enjoy my job! I feel a direct connection to both the ammo techs at the ASPs and the Marine on the firing line... that I provide a vital service to you, doing my part to ensure that the ammo you're issuing and firing is the safest and most reliable available to the Marine Corps. I'd like to thank all of you for the excellent cooperation you have given me... and for all the malfunction and defect reports I'm going to get next week. O

Mr. Francis is currently assigned to Marine Corps Program Department, Fallbrook, and may be reached at commercial (760) 731-3661 or email, francisja@mcpd.navy.mil.

Editors Note

Hope you found this expanded edition of our new format informative and interesting. We plan on having more expanded issues in the future, as contributions permit. Please send us your comments, suggestions, and articles.

George Morrison, Managing Editor

MARCORSYSCOM Hosts Explosives Safety Officer Training

Mr. George Morrison, MARCORSYSCOM-EES

MARCORSYSCOM held the first comprehensive training course tailored for Marine Corps Explosives Safety Officers (ESO) 4-15 June 01 at an off-site location near MCB Quantico.

All Marine Corps ESO's attended the ESO training course, developed by the U.S Army Defense Ammunition Center (USADAC) Training Directorate, and funded by MARCORSYSCOM Program Manager for Ammunition (AM). Also attending were guests from the Naval Ordnance Safety and Security Activity (NOSSA), HQ USMC, and U.S. Naval Base Norfolk for a total of 32 students.



Capt. Phil Wahle, MARCORSYSCOM-EES, assists a student during SAFER training.

This training course was developed as a result of studies conducted by MARCORSYSCOM-Environmental and Explosives Safety branch. The studies, driven by several installation failures of NOSSA conducted Explosives Safety Inspections (ESI), revealed a substantial disparity in levels of training

among Marine Corps ESO's. The ESO course was designed to deliver a uniform level of basic explosives safety knowledge relative to the Marine Corps Explosives Safety Program plus Department of Defense and Department of the Navy regulatory material.



Students were presented an overview of both Navy and Marine Corps explosives safety programs, instruction in Operational Risk Management (ORM), Standard Operating Procedures (SOP), the explosives safety site approval process, electrical safety and lightning protection, Hazards of Electromagnetic Radiation to Ordnance (HERO), inspection of ordnance facilities, mishap reporting, external explosives safety inspections and surveys, physical security of ordnance, ordnance transportation requirements, ordnance handling equipment requirements, explosives safety quantity-distance standards, environmental requirements relative to the EPA's Military Munitions Rule and disposition of excess/unserviceable ammunition, sources of information on explosives safety regulations, and Safety Assessment for Explosives Risk (SAFER).

The training material was presented by Mr. Pat Wheaton, Mr. Sidney Perryman, and Mr. Don Connelly of USADAC, Mr. Thierry Chiapello of MARCORSYSCOM, and Mr. Pete Yutmeyer and Ms. Meredith Hardwick of APT (Analysis, Planning, Test) Inc.

In addition to the basic explosives safety training, a special course in Safety Assessment for Explosives Risk

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(SAFER) was presented to the ESO's. SAFER is a computer model, developed cooperatively by the Department of Defense Explosives Safety Board (DDESB), the Services, and APT Inc. to quantitatively calculate explosives risk and establish acceptable risk criteria. This model has been approved for use by the DDESB, on a trial basis, to reduce the need for waivers/exemptions in certain situations where explosives safety quantity-distance criteria cannot be met.



Mr. Pete Yutmeyer, APT Inc., lectures on the mechanics and use of SAFER.

All Marine Corps ESO's are now trained and certified in the use of SAFER for explosives safety site planning. The Marine Corps is the only Service that has certified all its explosives safety personnel in the use of this risk-based system.

This pilot training course was universally well received by the Marine Corps ESO's. End-of-course student comments contained numerous suggestions for improvements that will be evaluated and incorporated into future presentations. Among the most numerous comments were; inclusion of more practical classroom exercises, use of more visual aids, inclusion of guest lecturers, closer tailoring to Marine Corps specifics, more directed discussion between ESO's, and expanded instruction on ESI's. SAFER training was rated as exceptional.

MARCORSYSCOM-AM, as sponsor of the class and manager of the Marine Corps Explosives Safety Program, is extremely pleased with the results of this initial training effort. This course, along with several others, will constitute the basis of the new ESO Qualification/Certification program. This new Qual/Cert program will be fully outlined in the upcoming publication of MCO P8020.10, Ammunition and Explosives Safety Policies, Program Requirements, and Procedures for Class V Material. Qual/Cert programs are not a new concept, however, it is new to the world of Marine Corps ESO's. Historically, these programs produce a better-trained, more professional cadre of personnel. We believe this will continue to hold true for our ESO's.

In addition to the Qual/Cert program, the new MCO will contain expanded guidance for commanders on the selection and qualifications of ESO's. Our long-range plan is to expand this guidance into standard qualifications and position descriptions for our personnel. Also included is more definitive guidance on ESO responsibilities, inspection guidance, records and reports requirements, and an appendix containing a variety of inspection checklists for examples or use.



Ms. Meredith Hardwick, APT Inc., answers question from Mr. Dan Conrady, ESO MCB Japan, seated right, and Mr. Scott Pierce, Safety Office MCAS Yuma seated left. Standing is WO Dave Wolfe, MARCORSYSCOM-EES.

Mr. Morrison is assigned to MARCORSYSCOM-EES, and may be reached at DSN 278-9476.

